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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of processing an input from a touch-plane operator input device, comprising:

(A) determining a first location of a first touch on the touch plane operator input device;

(B) determining a second location of a second touch on the touch plane operator input device;

(C) comparing the first and second locations to obtain an indication of an amount of difference between the first and second locations; and

(D) determining whether the indication of the amount of difference exceeds a predetermined amount, the predetermined amount comprising a first amount in an X-direction and a second amount in a Y-direction, and comparing a first amount of difference with the first amount and comparing a second amount of difference with the second amount;

wherein steps (A)-(D) are performed by discrete logic circuitry; and  
wherein the discrete logic circuitry provides an event notification to a microprocessor when the indication of the amount of difference exceeds the first predetermined amount; and

~~wherein the predetermined amount comprises a first predetermined amount that defines a perimeter of a region that surrounds the first location, and wherein the determining action (D) comprises determining whether the second location is outside the perimeter.~~

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2. (Currently Amended) A method according to claim 1,  
~~wherein the predetermined amount comprises the first  
predetermined amount in an X-direction and a second predetermined  
amount in a Y-direction;~~  
wherein the determining step (A) comprises determining an  
X-location and a Y-location of the first touch;  
wherein the determining step (B) comprises determining an  
X-location and a Y-location of the second touch;  
wherein the comparing step (C) comprises determining a first  
amount of difference between the X-location of the first touch and the  
X-location of the second touch, and determining a second amount of  
difference between the Y-location of the first touch and the Y-location of  
the second touch; and  
wherein the determining step (D) comprises comparing the first  
amount of difference with the first predetermined amount and comparing  
the second amount of difference with the second predetermined amount.

3. (Previously Presented) A method of processing an input from a touch  
plane operator input device, comprising:

- (A) determining a first location of a first touch on the touch  
plane operator input device, including determining an X-location and a  
Y-location of the first touch, including
- (1) acquiring a first plurality of data samples from the  
touch plane operator input device,
  - (2) calculating the X-location of the first touch by  
determining an average X-location for the first plurality of data  
samples, and
  - (3) calculating the Y-location of the first touch by  
determining an average Y-location for the first plurality of data  
samples:
- (B) determining a second location of a second touch on the  
touch plane operator input device, including determining an X-location

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and a Y-location of the second touch, including

(1) acquiring a second plurality of data samples from the touch plane operator input device,

(2) calculating the X-location of the second touch by determining an average X-location for the second plurality of data samples, and

(3) calculating the Y-location of the second touch by determining an average Y-location for the second plurality of data samples;

(C) comparing the first and second locations to obtain an indication of an amount of difference between the first and second locations, including

(1) determining a first amount of difference between the X-location of the first touch and the X-location of the second touch, and

(2) determining a second amount of difference between the Y-location of the first touch and the Y-location of the second touch; and

(D) determining whether the indication of the amount of difference exceeds a predetermined amount, the predetermined amount comprising a first predetermined amount in an X-direction and a second predetermined amount in a Y-direction, including comparing the first amount of difference with the first predetermined amount and comparing the second amount of difference with the second predetermined amount; wherein steps (A)-(D) are performed by discrete logic circuitry;

and

wherein the discrete logic circuitry provides an event notification to a microprocessor when the indication of the amount of difference exceeds the predetermined amount.

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4. (Original) A method according to claim 1, further comprising displaying a mouse pointer moving from the first location to the second location on a display.

5. (Currently Amended) A method of processing an input from a touch plane operator input device, comprising:

(A) determining a first location of a first touch on the touch plane operator input device;

(B) determining a second location of a second touch on the touch plane operator input device;

(C) comparing the first and second locations to obtain an indication of an amount of difference between the first and second locations; and

(D) determining whether the indication of the amount of difference exceeds a predetermined amount, the predetermined amount comprising a first amount in an X-direction and a second amount in a Y-direction,

wherein a first amount of difference is compared with the first amount and a second amount of difference is compared with the second amount;

wherein steps (A)-(D) are performed by discrete logic circuitry; and

wherein the discrete logic circuitry provides an event notification to a microprocessor when the indication of the amount of difference exceeds the predetermined amount,

wherein the predetermined amount defines a perimeter of a region that surrounds the first location, and wherein the determining step (D) comprises determining whether the second location is outside the perimeter.

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6. (Previously Presented) A method according claim 1, wherein steps (A)-(D) are performed under the control of a state machine implemented in the discrete logic circuitry.

7. (Currently Amended) A method of processing operator inputs to a touch plane operator input device to emulate a hardware mouse, comprising:

- (A) displaying a mouse pointer at a first location on a display;
- (B) receiving an operator touch indicative of a desired second location for the mouse pointer on the display, the operator touch being received by a touch plane interface from a sensor system of the touch plane operator input device;
- (C) comparing the first and second locations to obtain an indication of an amount of mouse pointer movement; and
- (D) determining whether the indication of the amount of mouse pointer movement exceeds a predetermined amount, the predetermined amount comprising a first predefined amount in a first directional plane and a second predefined amount in a second directional plane, and comparing a first amount of difference in the first directional plane with the first predefined amount and comparing a second amount of difference in the second directional plane with the second predefined amount;

wherein the steps (B)-(D) are performed by discrete logic circuitry;

wherein the discrete logic circuitry provides an event notification to a microprocessor when the indication of the amount of movement exceeds the predetermined amount; and

~~wherein the predetermined amount defines a perimeter of a region that surrounds the first location, wherein the determining action (D) comprises determining whether the second location is outside the perimeter, and wherein the event notification is provided if the second location is outside the perimeter.~~

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8. (Original) A method according to claim 7, wherein the touch plane operator input device forms at least part of an operator interface of an internet access device.
9. (Original) A method according to claim 7, wherein the touch plane operator input device forms at least part of an operator interface of an industrial control system.
10. (Original) A method according to claim 7, wherein the touch plane interface is located on a system-on-chip integrated circuit chip, wherein the microprocessor is located on the integrated circuit chip.
11. (Original) A method according to claim 7, wherein the touch plane operator interface and the display in combination comprise a touch screen.
12. (Original) A method according to claim 7, wherein the touch plane operator interface comprises a touch pad.

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13. (Currently Amended) An integrated circuit comprising:
- (A) a microprocessor;
  - (B) a touch screen interface, the touch screen interface being adapted to interface the microprocessor to a touch screen; and
  - (C) a digital signal processor, the digital signal processor being coupled between the touch screen interface and the microprocessor, the digital signal processor being adapted to determine a location of a touch on the touch screen, the digital signal processor including a comparator, the comparator comparing a new location of a touch to a previous location of a touch, and the digital signal processor issuing an event notification to the microprocessor if an indication of the difference between the previous location and the new location exceeds a predetermined amount, the predetermined amount comprises a first pre-calculated amount in a first direction and a second pre-calculated amount in a second direction, where a first amount of difference between touch locations in the first direction is compared with the first pre-calculated amount and a second amount of difference between touch locations in the second direction is compared with the second pre-calculated amount ~~the predetermined amount defines a perimeter of a region that surrounds the first location, wherein the comparator determines whether the second location is outside the perimeter, and wherein the event notification is issued upon a determination that the second location is outside the perimeter.~~

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14. (Currently Amended) A device comprising:
- (A) a touch screen, the touch screen including a touch screen display and a touch screen sensor system; and
  - (B) an integrated circuit, the integrated circuit including
    - (1) a microprocessor;
    - (2) a touch screen interface, the touch screen interface being adapted to interface the microprocessor to the touch screen; and
    - (3) a digital signal processor, the digital signal processor being coupled between the touch screen interface and the microprocessor, the digital signal processor being adapted to determine a location of a touch on the touch screen, the digital signal processor including a comparator, the comparator comparing a new location of a touch to a previous location of a touch, and the digital signal processor issuing an event notification to the microprocessor if an indication of the difference between the previous location and the new location exceeds a predetermined amount, the predetermined amount comprises a first amount in an X-direction and a second amount in a Y-direction, and wherein an amount of difference in the X-direction is compared with the first amount and an amount of difference in the Y-direction is compared with the second amount, , wherein the predetermined amount defines a perimeter of a region comprising the first location, wherein the comparator determines whether the second location is outside the perimeter, and wherein the event notification is issued responsive to the second location being outside the perimeter.



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15. (Cancelled)

16. (Currently Amended) A method according to claim 1, wherein the first ~~predetermined~~ amount defines ~~a~~ the perimeter in a first dimension and the second ~~predetermined~~ amount defines ~~a~~ the perimeter in a second dimension.

17-19. (Cancelled)

20. (Currently Amended) A method of processing data from a touch plane operator input device, comprising:

- (A) determining a first location of a first touch on the touch plane operator input device;
- (B) determining a second location of a second touch on the touch plane operator input device;
- (C) determining that the second location is outside a perimeter of a region, the first location being inside the perimeter of the region; and
- (D) issuing an event notification to the microprocessor in response to determining that the second location is outside the perimeter of the region;

wherein steps (A)-(D) are performed by digital signal processor separate from the microprocessor, wherein the perimeter of the region comprising the first location is defined by a predetermined amount, the predetermined amount comprises a first predetermined amount in an X-direction and a second predetermined amount in a Y-direction, such that a first amount of difference in the X-direction is compared with the first predetermined amount and a second amount of difference in the Y-direction is compared with the second predetermined amount; and

wherein a comparator determines whether the second location is outside the perimeter.

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21. (Previously Presented) A method of processing data from an operator input device, comprising:

(A) acquiring data from the operator input device relating to a desired first location of the mouse pointer on the display;

(B) displaying a mouse pointer at a first location on a display;

(C) acquiring additional data from the operator input device;

(D) causing a microprocessor to wait to process location data from the operator input device until after the additional data is acquired, such that the microprocessor does not process the additional data;

(E) after acquiring the additional data, acquiring further additional data from the input device indicative of a second desired position of the mouse pointer on the display, the second desired position having a second location that is outside a perimeter of a region, the first location of the first operator touch being inside the perimeter;

(F) providing the microprocessor with information relating to the second location of the second touch;

(G) processing the information relating to the second location of the second touch at the microprocessor;

(G) displaying the mouse pointer at the second location on the display;

wherein the causing step (D) causes microprocessor overhead required to process data from the operator input device to be reduced as compared to the microprocessor overhead that would be required if the microprocessor processed the additional data.

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22. (Previously Presented) A method of processing data from a touch plane operator input device, comprising:

(A) acquiring data from the touch plane operator input device relating to a first touch on the touch screen;

(B) determining a first location of the first touch on the touch plane operator input device;

(C) acquiring additional data from the touch plane operator input device;

(D) causing a microprocessor to wait to process location data from the touch plane operator input device until after the additional data is acquired, such that the microprocessor does not process the additional data;

(E) after acquiring the additional data, acquiring further additional data from the touch plane operator input device relating to a second touch on the touch screen, the second operator touch having a second location that is outside a perimeter of a region, the first location of the first operator touch being inside the perimeter;

(F) determining a second location of the second touch on the touch plane operator input device; and

(G) providing the microprocessor with information relating to the second location of the second touch;

(H) processing the information relating to the second location of the second touch at the microprocessor;

wherein the causing step (D) causes microprocessor overhead required to process data from the touch plane operator input device to be reduced as compared to the microprocessor overhead that would be required if the microprocessor processed the additional data.

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23. (Previously Presented) A method according to claim 21, wherein the first and second operator touches are both part of a continuous series of touches that occur as part of an operator touch trajectory that extends from a first region of the touch plane operator input device to a second region of the touch plane operator input device.

24. (Previously Presented) A method according to claim 21, wherein the causing step is performed by a digital signal processor.